STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
LANSING

JENNIFER M. GRANHOLM
GOVERNOR

STEVEN E. CHESTER
DIRECTOR

February 23, 2006

Mr. Juan Thomas
U.S. Environmental Protection Agency, Region 5
77 West Jackson Boulevard
Chicago, Illinois 60604-3507

Dear Mr. Thomas:

Subject: Final Determination of a Mixing Zone Request; Johnson Controls, Inc. (JCI) (former Stanley Tools); MID 099 124 299

The Michigan Department of Environmental Quality (MDEQ), Waste and Hazardous Materials Division (WHMD), has reviewed your request for a Mixing Zone Determination for venting groundwater to the Red Cedar River from JCI, in Fowlerville, Michigan. Your request was forwarded to the MDEQ, Water Bureau (WB). The WB's response to that request for a mixing zone determination is enclosed. The response the WB provided identifies the acceptable concentration limits for discharge of the various chemicals characterized in your mixing zone request to the Red Cedar River.

Based on the information provided, it is determined that there is a reasonable potential for the discharge of some chemicals to cause or contribute to water quality standards (WQS) being exceeded.

Recommended acute mixing zone-based groundwater surface water interface (GSI) values are summarized in the table below:

Table 1: Plume Venting to the Red Cedar River

Parameter	Final Acute Value (ug/L)	Chronic Value (ug/L)	Reported Worst Case Maximum Site Concentration (ug/L)
Trichloroethylene	3500	N/A	4200
Arsenic	680	N/A	161
Cadmium	77	N/A	13
Chromium, Hexavalent	32	N/A	20
Copper	144	N/A	103
Nickel	5800	N/A	1180
Cyanide, Free	44	N/A	10

General Comments

1. The final acute values listed above are the mixing zone-based GSI criteria. These limits are provided for chemicals determined to have a reasonable potential to exceed the acute mixing zone-based GSI criteria. These values, as well as the generic GSI criteria for other chemicals not specifically identified in the mixing zone request, must not be exceeded at the GSI compliance monitoring wells; if they are, further remedial action will be required. The facility has the following options in regards to parameters that exceed the acute mixing zone-based GSI criteria in on-site monitoring wells:

   a. If exceedances are upgradient of the compliance monitoring wells, JCI must demonstrate that data from a final approved GSI compliance monitoring well system are, and will be, in compliance with acute mixing zone-based GSI criteria for those parameters. Averaging of groundwater data is not allowed for comparison to generic GSI or acute mixing zone-based GSI criteria, nor is it allowed for bioaccumulative contaminants of concern (BCCs). Acute mixing zoned-based or generic GSI criteria may not be exceeded in any individual GSI compliance monitoring well.

   b. The effluent limits for trichloroethylene are based upon Tier II water quality values. The facility does have the option to submit additional aquatic toxicity testing data that may allow for the development of less restrictive criteria, i.e., Tier I, for this parameter. The facility should contact the WB for guidance prior to conducting any additional testing.

   c. Prevent the discharge of all parameters that exceed the acute mixing zone-based GSI criteria in the GSI compliance monitoring wells. This option would require the focus of subsequent site investigations to hydrogeologically define remediation designs for capturing the groundwater discharge, further plume characterization, and identification of sources for source control measures.

2. It has been determined that any other parameter not given a recommended mixing zone based GSI criteria in the table above, or in the enclosure, will not cause or contribute to WQS being exceeded at this time. This determination is based upon the reported maximum values in JCI's mixing zone request which was submitted to the WB by the WHMD.

In order to demonstrate the groundwater discharge long-term compliance with the mixing zone-based GSI criteria, JCI will need to submit a Mixing Zone Compliance Monitoring Plan for review and approval. The Mixing Zone Compliance Monitoring Plan should include a Sampling and Analysis Plan, to address both mixing zone chemicals and other chemicals reported in the mixing zone request, identification of the wells that JCI proposes to sample to show compliance with the mixing zone-based GSI criteria (both along the GSI and within the appropriate portions of the plume), and provide an

explanation of the monitoring schedule and reporting process. Please submit the Mixing Zone Compliance Monitoring Plan to this office, within 60 days of receipt of this letter.

In addition to the specific Mixing Zone Compliance Monitoring Program, if any GSI compliance monitoring data show exceedances of the maximum value reported to the WB in the mixing zone determination request i.e., for chemicals reported in the mixing zone request but were shown to be meeting the GSI criteria, the data must be promptly evaluated by JCI to determine the significance and whether a new mixing zone determination request should be submitted to the WB. If there is an exceedance of the prior reported maximum value for any parameter of concern, please contact this office for further direction.

Should you have any questions regarding this letter or the Mixing Zone Determination, please contact me at slaytond@michigan.gov or by telephone.

Sincerely,

David Slayton

David Slayton
Hazardous Waste Technical Support Unit
Hazardous Waste Section
Waste and Hazardous Materials Division
517-373-8012

Enclosure
cc: Mr. Lee Carter, MDEQ
Mr. Steve Buda, MDEQ
Mr. Ron Stone/Mr. John McCabe/Mr. David Slayton/Reporting, MDEQ
HWS-CA File